Abstract

An apparatus is disclosed that is an analog phase detector where a summation technique is used to determine the phase difference of the two input waveforms of the phase detector. Instead of multiplying the two signals – a technique used in the prior art - a difference amplifier subtracts one waveform from the other. The difference amplifier produces a waveform whose maximum peak-to-peak amplitude is directly proportional to the phase difference. Feeding this waveform into an envelope detector followed by a low pass filter, we are able to get a DC voltage level that is directly proportional to the phase difference of the two input waveforms.